

Public Review Analysis and Recommendations FGDC Draft Standards for Digital Elevation Data			
K	S	Comment Synopsis	Recommended Action
1	G	Recasting of existing description of USGS DEM's, with additional commentary related to FGDC. ONLY valuable as a START toward a full content standard, and then ONLY if recast by a group with a broader view of digital terrain data. Ignores non-raster and bathymetric data. Only representative of one agency. Does not serve NOAA, Commerce, DED developers, software implementors or people overseas who may be active or captive consumers of our software, data and technology.	The scope of this standard is limited to the FGDC definition of Framework Land Elevation Data. The parallel between the USGS DEM and the framework definition is an unavoidable fact, although many USGS specific references have been removed..
1	A	Self serving example. Deserves no credit without other examples such as point data, and contour data models, and DTED level 0. Should not be approved without these examples.	The scope of this standard is limited to the FGDC definition of Framework Land elevation Data. The example in appendix A is an example of elevation data meeting the framework definition. The parallel between the USGS DEM and the framework definition is an unavoidable fact.
2	G	Should be retitled "Draft Content Standards for Digital Elevation Models" since that is all it addresses. Otherwise it should address digital hypsography data and triangulated irregular network data.	Retitled: Content Standard for Digital Gridded Land Elevation Data, to be more descriptive of the FGDC Framework theme.
2	G	Research under way toward a seamless "point operational database may impact this standard and may need to be accommodated in the next draft.	Non substantive, NMD programs do not drive FGDC/Framework standards.
2	A	There are references to level 3 data but there is question existing as to whether they will ever be produced.	Non substantive. Appendix is an example to show metadata delivery. It does not matter if they are produced.
2	G	Should add a level or expand the definition of a level to encompass data produced by photogrammetric compilation of breaklines and points, since this is SOP for much of private industry. Preferably add a level which ties the accuracy of the data to the flight height of the images used for the stereo model.	Non substantive. Appendix A, is an example to provide guidance for metadata delivery.
2	G	"Shall" should be consistently used rather than sometimes being replaced with "should".	Metadata references modified to read: "shall be documented in the metadata field."

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2	G	“Reported” is sometimes replaced with “described” or “fully documented”. Suggest using one term consistently.	Metadata references modified to read: “shall be documented in the metadata field.”
2	G	Change the phrase “in the metadata” to “in the following metadata field”.	Metadata references modified to read: “shall be documented in the metadata field.”
3	G	This draft describes USGS DEM data and ignores other types such as TIN data, vector hypsography, DTED. If this remains so, the standard should be renamed to “Content Standards for Raster Digital Elevation Data” Further, in section 2 the second paragraph second sentence should read “The raster data...”. Theme keywords for hypsography, contour line and digital contours should be removed if not spoken to in the standard.	Retitled: Content Standard for Digital Gridded Land Elevation Data. Sited sentence is clear and correct . Theme keywords remain as they are examples of appropriate metadata to include with the provided example of DEM metadata.
3	G	Should speak to subject of “true ground” .vs. Surface cover. Above ground objects such as trees and or manmade structures may be depicted, particularly in data collected with airborne RADAR and LIDAR systems.	Additional verbage added to section 2. To speak to this issue.
3	A 2.3	Void areas due to breaks in contours should include Level 3 DEMs. Discussion also misses fact that areas which pass outside our international boundaties are set to void for all levels of DEMs.	Non substantive. Appendix is an example to show metadata delivery. Treatment of overlap of international boundaries in comment is USGS specific and does not apply to this standard.
3	A 2.4. 2.1	Report should include following: RMSE is computed from a minimum of 28 test points, accuracy values- Level 3 data must have an RMSE less than 1/3 of the source graphic contour interval and systematic errors less than 2/3/the contour interval. It should be stated that RMSE limits have not been set for Level 4 DEMs.	Non substantive. USGS processes do not apply to this standard. Appendix is an example to provide guidance for metadata delivery.
3	A 2.5. 2.1	“Hydrography and drain files” can be described together as “hydrology”. There should be some mention of integration of transportation data during DEM generation.	Non substantive. Outside scope. Appendix is an example to show metadata delivery.

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3	A 2.5. 2.1	<p>Add: Level 4 DEMs are made from remote sensing of a surface via RADAR or LIDAR.</p> <p>Clarify that water body edits are performed on ALL levels of DEMs.</p> <p>Clarify that edge matching is not performed on mixed level DEMs.</p>	<p>Non substantive.</p> <p>Appendix is an example to provide guidance for metadata delivery. USGS processes do not apply to this standard.</p>
4	G	<p>Since this is defined as NSDI “Framework” standard, and “Framework” as defined by the FGDC, (i.e CONUS areas at 1:100K granularity) does not match DE data produced by the Army for DOD installations, Corps Civil Works projects, and other Army activities, this standard may not have much applicability to the Army.</p>	<p>The scope of this standard is limited to the FGDC definition of Framework Land elevation Data. We think it can be applied in many cases, particularly with changes made as a result of public review.</p>
4	G	<p>This standard lacks specification of how to define insets.</p>	<p>Not applicable, outside scope of standard. Image insets define discrete separate files , and present themselves as a function of cartographic presentation.(ie. Overprint, display layers).</p>
4	G	<p>Add following key words to metadata:</p> <p>Horizontal units</p> <p>Projection</p> <p>Datum</p> <p>Datum_origin_X_offset_from_WGS84</p> <p>Vertical Datum</p> <p>Vertical Units</p> <p>Projection Zone</p>	<p>Outside scope, refer to Content Standard for Geospatial Metadata.</p>
4	G	<p>Lacks explicit specification of georeferencing information.</p>	<p>Sections 4,5 and 6 all provide explicit georeferencing information, including concrete examples.</p>
5	G	<p>Appears to apply to “Small Scale” mapping, i.e. USGS 1:24K. Not much application to “Large Scale” engineering/planning work.</p>	<p>The scope of this standard is limited to the FGDC definition of Framework Land elevation Data. It is not specifically scale dependant. Scale specifications removed.</p>
5	G	<p>Title does not convey the application to land surface only. (Treatment of water surface instead of bottom)</p>	<p>Retitled:</p> <p>Content Standard for Digital Gridded Land Elevation Data. Bathymetry deals with bottom surface under water.</p>

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6	G	Recommend FGDC not endorse since this is an SOP of one organization and falls far short of a standard which would be useful for multiple communities.	The scope of this standard is limited to the FGDC definition of Framework Land Elevation Data.
6	G	A standard should not specify precision. Units of meters may satisfy many but some may want decimeters. Precision should be specified in the metadata.	No specification in the standard. Example in metadata is meters. The standard requires reporting of the precision.
6	G	Registration at the cell level is overlooked. Are values discreet at a point or do they represent a cell average? If a cell average, are registered to a corner or the center of the cell? What was the methodology for developing the grid values?	Discrete points. "Cell averages" are capture process dependant and are outside the scope of this standard. Process description in the metadata provides information on capture methods which provide information on how point values were determined.
7	A	Remove the reference numbers from the metadata example in appendix A and maintain the indentation that preserves the ordering and flow of the CSDGM standard elements.	We feel that the numbers are helpful as reference guides and should stay in the document.
8	A	It is informative, and useful to see the use of the reference numbers to identify the metadata fields.	We feel that the numbers are helpful as reference guides and should stay in the document.
8	A	1.5.1.3 North_Bounding_Coordinate: 37.25 1.5.1.4 South_Bounding_Coordinate: 37.375 Seems to me the south coord should be less than the north.	Problem resolved.
3	1.1	First sentence:change "and" to "as" Add space between 3 rd and 4 th sentence.	Corrections applied.
2	1.2	Space missing in "questions concerning"	Correction applied.
2	1.3	Change "The standard will describe" to "This standard describes"	Correction applied.
2	1.4	Add "draft" to reference to the FGDC Content Standard for Geospatial Metadata"	The CSGM has been endorsed by the FGDC and is no longer a DRAFT.
3	1.4	Add a space between the example parenthesis. Pluralize Standard with respect to NMAS and introduce the NMAS and NSSDA acronyms here.	Corrections applied.
1	2	Limited examples of 30 meter post space USGS DEM's is but one example of single-agency legacy (backward looking) content.	Non substantive.

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1	2	Verbiage on “desired post spacings” is inappropriate editorializing, reflecting a limited view.	References removed
1	2	Implies that there is only one elevation associated with a location. As in DTED level 0 data there may be up to four elevations for a location: quasi-maximum, quasi-minimum, mean and simple. For example an overhanging cliff may have three: top surface, under hanging cliff surface and underlying surface.	The intent of this standard is to serve the broad community. We don’t think the general community would be served by a six dimensional array for elevation data.
5	2.0	Land surface only. What about bathymetry? Use metric measure rather than arc-sec. Define “low relief”. Define “less” , in “1/2 arc-sec or less”	Frame work definition does not include bathymetry with land. Standard is open to all, simply recommends arc-sec. Specification of delta or slope is project dependant and outside the scope of this standard. “Less than ½ arc second removed.
2	2	Add comma “will, ideally, be collected”	Correction applied.
6	2	Post spacing should not be specified as it is strongly application driven.	Post spacing is suggested, not specified.
4	2	Suggested post spacing of 2 arc-sec or greater discounts use of 3 arc-sec data, commonly used for specific applications.	Post spacing is suggested, not specified.
5	3.0	Change the fourth bullet to read: o Mobile Survey platforms - Mobile survey platforms mounted with mechanical or electronic positioning devices, such as gyroscopic stabilized motion sensors or geopositioning devices such as Global Positioning System (GPS) receivers. The platform mounted system is moved from location to location to collect horizontal or vertical positions.	Changes applied

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5	3.0	<p>Separate words “areused”</p> <p>Clarify how hydro features “aid” in collection of elev. data.</p> <p>Does “these” refer to hydro or topo features?</p>	<p>Correction applied.</p> <p>Modified to reflect use as artifact correction tool.</p> <p>Both.</p>
1	3	<p>First sentence :change elevation data “has” to “have:....</p> <p>Carto Source bullet: Note that carto sources are stylized and omit features smaller than a specified but rarely documented minimum mapping unit.</p>	<p>Correction applied.</p> <p>Added clarification for generalization.</p>
3	3	<p>Delete period after “ non literal remote sensing sources”</p> <p>Delete period after “Ground surveys”</p> <p>Spirit leveling refers to a specific instrument from the past. “Geodetic leveling” would be more appropriate.</p>	<p>Reference removed.</p> <p>Period removed.</p> <p>Geodetic replaced spirit.</p>
5	3.0	<p>Change fifth bullet to read:</p> <p>“Terrestrial data collection systems such as electronic total station, spirit leveling and data recording may be used to collect highly accurate spot elevations, or to buuild generalized planar surfaces which represent the general slope and trend of the surrounding terrain.”</p>	<p>Terrestrial added, electronic total station is too specific, as was spirit leveling, which was also generalized.</p>
2	3	<p>If acitve sensors are non-literal, why aren’t passive sensors literal? Active and passive alone would be more appropriate.</p>	<p>Changed from non-literal to non-imaging</p>
2	3	<p>Modify first sentence to say “These sources include the following:”.</p> <p>Add space to “areused”</p> <p>Second bullet: modify to say “and other water bodies”. Pluralize “type”</p> <p>Third bullet: misspelled “Rradar”</p>	<p>Corrections applied.</p>
2	4	<p>First sentence: Add “the” before reference to each coordinate system.</p>	<p>Correction applied.</p>

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4	4	Suggests using four bounding sides. TEC produces DE data with more than four bounding sides.	Determined important for framework consistency.
5	4.0	<p>Add “State Plane Coordinate System” to sentence one.</p> <p>Why is the geographic coordinate system “highly desirable”? Determination of coordinate system desirability is determined by application/project.</p> <p>Remove “significant portion or the user community” as it is not necessary.</p>	<p>SPCS reference added.</p> <p>This is explained in the standard, and the option to use any coordinate system is open. Seamless omnidirection and scaleless.</p> <p>Quoted text removed.</p>
1	4	Descriptions show USGS legacy thought.	Gridded models as framework describes. Non substantive comment.
3	4.1	(latitude,longitude): add a space after the comma.	Correction applied.
5	4.1	Sentence 3: add “varies with” after “elevation” and before “data”.	This comment does not appear to make sense.
2	4.1	Add a comma between “parallels, respectively”	Correction applied
1	4.1	Description is of a grid developed by the Army Map Service, three decades ago. The reasons for defining this grid and problems associated with it should be discussed.	Historical description outside scope, problems are mentioned.

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1	4.2	Inadequate description of the dropouts in the example USGS 30m UTM data set. How does one deal with the dropouts?	Standard discusses this, but more specific direction of how to “deal with” this should be part of a specification.

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2	4.2	<p>Missing space between first and second paragraph.</p> <p>Second Paragraph. We suggest changing the third and fourth sentences, “Within the traditional 6 degree wide UTM zones, UTM grid tiles match perfectly both north-south and east-west. Tiles do not join east-west between adjoining UTM zones.” to “North-south and east-west UTM grid tiles match perfectly within the traditional 6 degree wide UTM zones. However, the grid tiles do not join between adjacent UTM zones.”</p> <p>Third paragraph:gridded is misspelled.</p> <p>Third Paragraph, Last Sentence. More explanation should be made concerning the switch from the phrase “geographic quadrangle” to “quadrilateral” in the next paragraph. A quadrangle is a figure with four angles. A quadrilateral is a figure with four sides. A rectangle is a figure with four right angles. All quadrilaterals are quadrangles, but not necessarily rectangles, even though they may have parallel sides.</p> <p>We suggest changing the sentence, “The geographic quadrangle is not a rectangle; instead it is a figure where no two sides are parallel, while the UTM tile sides are parallel and perpendicular.” to “The geographic quadrangle is not a rectangle; instead it is a quadrilateral, in which two sides are not parallel, while the UTM tile sides are parallel and perpendicular.” In subsequent references, the phrase “geographic quadrilateral” would be less confusing than just “quadrilateral”.</p>	Suggestions and corrections applied.

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3	4.2	Note that the geographic grid diverges from the UTM in a DOWNWARD arc for US territories south of the equator. In fact for the Geographic Quadrangle the north and south neat lines are represented on many typical map projections as parallel curves of latitude	directional removed Non substantive, map projection detail.
2	5	Second Sentence. The meaning of this sentence is a little difficult to follow. We suggest changing the sentence from, "In recognition of significant application of other widely accepted datums throughout the digital geospatial community, other datums may be referenced." to "Other datums may be referenced, in recognition of the significant application of other widely accepted datums throughout the digital geospatial community." Third Sentence. We suggest changing the phrase, "In any case it is" to "In any case, it is".	Suggestions applied.
3	5	Geodetic is misspelled in the metadata citing.	Correction applied.
4	5	Standard suggests NAD83 as horiz. Datum. The Army primarily uses WGS84, and occasionally other local datum.	Framework default datum but the standard is open.
1	5	Bias toward the USA.Default hroizontal and vertical datums should be world standards.	Framework default datum but the standard is open.
6	6	Origin and sequence of the grid should not be specified, rather should be reported in the metadata. Many can easily rotate to fit needs.	Standardization of origin supports the framework concept, and rotation may be applied to fit other requirements.

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2	6	“Pluralize “profile” in “spacing between profile”	Correction applied.
1	7	Assignment of zero value to oceans or estuaries is limiting. Consider a flag to separate land values of zero from water. Is bathymetry not allowed? Reference to section 11.1 should refer to section 12.1.	Changed to reflect an example of consistent treatment. Bathymetry is seperated in framework definition. 11.1 changed to 12.1
6	7.1	No flag should be specified in the metadata. -32,767 could be a valid oceanic depth if units are feet.	Oceanic depths are not part of this standard, as defined by framework. Void treatment is open, direction is to document in metadata.
2	7.1	Second Sentence. We suggest changing the phrase, “overprinted by photo images” to “substituted by photo images”. This statement is true enough, however, photo imagery was substituted for contours on very few USGS quadrangles. A much more common example of void contour areas would be where the intricate surface pattern has been substituted for contours. Fourth Sentence. A space is missing in the phrase, “areamay”. The footnote at the bottom of the page is redundant, because this explanation has already been made in the fourth paragraph in section 4.2.	This is an example. Substituted replaced overprinted. Space inserted Footnote removed

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6	7.2	Representing oceans as "0" causes problems, such as with the everglades. Many users need ocean bottom information. Same applies to bodies as the Great Lakes.	Not required, simply an example of consistent treatment. Documentation in metadata is required.
2	7.2	Second Sentence. Coastal shorelines are technically supposed to be compiled at mean high water on USGS maps. However, coastal shorelines are normally compiled as they appear on aerial photography. The vertical datum of bathymetry is defined as mean lower low water. Occasionally, the USGS has to adjust the shoreline shown on the map to accommodate bathymetric contours supplied by the National Ocean Service. The vertical datum hasn't been described as mean sea level on USGS maps for many years. However, ocean surface elevations are collected with a value of zero on DEM's. The difference between the vertical datums is regarded as noise, because the elevations will still meet NMAS requirements. The only suggestion we have is to consider changing the sentence, "Oceans or estuaries at mean sea level are assigned an elevation value of zero." to "Oceans or estuaries are assigned an elevation value of zero."	Mean sea level reference removed
2	8	As a word of caution, referencing URL's in standards can be risky business, because unless subsequent revisions of the file replace the former ones with the same file name, the URL listed in the standard will no longer be correct and the old WWW address will need a pointer to get to the new URL.	Edit all to be current. Leave in with the understanding that failed links are less of a problem than no links.

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1	9	Recommendation to use the raster profile of SDTS discounts the inclusion of point data, digitized contours, and the use of other elevation/bathymetric models.	Gridded data standard, as defined by framework.
4	9	Standard suggests use of SDTS. TEC uses DTED or other non-standard formats, not SDTS.	Suggested transfer format, not required.
1	10 10.1 10.2	<p>Description of resolution is incorrect.</p> <p>Recommend: Resolution refers to the smallest feature whose size and shape can be determined (and such that two separate features may be distinguished as separate). This differs from detectability in that a feature smaller than the grid cell size of a raster data set may be detectable, under certain conditions, several grid cell are required to resolve size/shape, and separate distinct objects.</p>	Resolution discussion modified to reflect these concepts.
2	10.1	<p>Title Heading. The first letter in “resolution” should be capitalized.</p> <p>First Sentence. We are not familiar with the phrase, “sampling interval” in reference to DEM’s. This phrase is also used in section 10.2 Vertical Resolution. We suggest eliminating the first sentences in both section 10.1 and 10.2, because the explanation (if true) is not necessary, since the phrase “sampling interval” is not used again in the document.</p> <p>We suggest adding the sentence, “Horizontal resolution should not be confused with horizontal accuracy.” Between the second and third sentences.</p> <p>Fourth Sentence. There is a space missing at the beginning of the sentence.</p>	Changes to this section render all these comments resolved or non-applicable

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3	10.1	Using the word “feature” may lead to confusion, since this standard (as stated in section 2) addresses “land surface elevations”. Suggest replacing “feature” with “elevation data element” or something to that effect.	We think feature is the descriptor least likely to cause confusion.
1	10.2	Discussion of vertical accuracy should include the effects of sources: image resolution, contour map interval and minimum mapping unit simplifications, incompletely corrected radar or imagery distortions, base to height ratio and scale of photography.	This is more technical detail than is appropriate for a Content standard as defined by the FGDC.
1	10.2	This section should address the concept of minimum mapping unit which means that sufficiently small features may not even be detectable, let alone resolved in a DED derived from a topographic map.	This is more technical detail than is appropriate for a Content standard as defined by the FGDC.
2	10.2	Title Heading. The first letter in “resolution” should be capitalized.	Changed to Vertical Precision
1	11	Raster mentality should be corrected. Does not relate to contour or point elevation data.	The scope of this standard is limited to the FGDC definition of Framework Land elevation Data. It does that.

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2	11	<p>Fourth Sentence. We suggest changing the sentence, “Standardized accuracy description terminology in the metadata will allow users to easily determine the data quality for a given area and will also help determine the effect of accuracy on a specific application.” to “Standardized accuracy description terminology in the metadata allows users to easily determine the data quality for a given area and helps to determine the effect of accuracy on a specific application.”</p> <p>Seventh Sentence. We suggest changing the phrase, “should be reported in the metadata:” to “should be reported in the following metadata field:”</p>	Replacement of this section renders these comments non-applicable.
2	11.2	First Sentence. We suggest changing the phrase, “is a measure which accounts for” to “is a measure that accounts for”.	Correction applied.
2	11.3	First Sentence. We suggest changing the phrase, “is a measure which accounts for” to “is a measure that accounts for”.	Correction applied.

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2	11.4	<p>Third Sentence. We suggest changing the sentence, “Because terrain features are generalized in the surface represented by a raster elevation model, i.e. the terrain which falls between posts is not represented, it is difficult to measure the horizontal accuracy directly from a matrix.” to “It is difficult to measure the horizontal accuracy directly from a matrix, because terrain features are generalized in the surface represented by a raster elevation model and the terrain that falls between posts is not represented.”</p> <p>Fifth Sentence. We suggest changing the sentence, “The computed value for the absolute horizontal accuracy, if available, shall be reported in the metadata:” to “If available, the computed value for the absolute horizontal accuracy should be reported in the following metadata field:”.</p>	<p>Third sentence modified, as recommended.</p> <p>Fifth sentence modified as recommended.</p>
3	11.7	<p>Delete the sentence “Relative vertical accuracy has also been referred to as vertical precision”. These two terms are distinctly different. Precision is viewed in a relative sense, but not as this sentence may imply. Since precision is not discussed in the standard, it will lead to confusion.</p>	Removed

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2	11.8	<p>Second Paragraph, Third Sentence. Change the phrase, “95% confidence interval” to “95% confidence level.”</p> <p>Third Paragraph. Delete the space at the beginning of the paragraph.</p> <p>Fourth Paragraph, Fourth Sentence. There is a space missing in the phrase, “sothat”.</p> <p>Fifth Paragraph, First Sentence. We suggest changing the phrase, “is being developed by the FGDC which would supersede National Map Accuracy Standards” to “is being developed by the FGDC which will supersede the National Map Accuracy Standards”.</p> <p>Fifth Paragraph, Second Sentence. Change the phrase, “95% confidence circle” to “95% confidence level”.</p>	Section removed.
3	12.1	<p>“Ideally the slope.....not constrained by artifacts such as benching...” While this is true for narrow channels, to the best of our knowledge, 1/4 inch or wider ,double line streams as measured on a graphic map at any scale, must be stair stepped between contour crossings due to current technological limitations.</p> <p>In addition to the “Edit by Size to include” bullet: Open water around small islands exceeding 1/4 inch along the major axis.</p>	<p>Statement describes an ideal situation, and does not describe a requirement which cant be met due to technological limitations.</p> <p>Edit by size section removed since more appropriate for a specification</p>

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2	12.1	<p>Second Paragraph, Hyphenated Bullets. The terms “1:24,000 scale” and “1:100,000 scale” should be hyphenated.</p> <p>Fourth Paragraph. We suggest changing this paragraph to, “The pool elevation and the source of the normal, high, or low pool level for reservoirs, lakes, or other standing water bodies should be referred to in the metadata, along with whether the elevation is tied to a water control structure or a local bench mark. If the pool elevation is interpolated from other sources, this is reported in the metadata also.”</p> <p>Fifth Paragraph, Second Sentence. Add a space before the second sentence.</p>	<p>Section changed, comments taken into consideration where applicable.</p>

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2	12.1	<p>First Paragraph, Second Sentence. We suggest changing the sentence, “The water level datum is the common surface of reference from which depths are measured and from which the elevation of the surface is reported.” to “The water level datum is the common surface of reference from which depths are measured and the elevation of the surface is reported.”</p> <p>Second Paragraph, Second Sentence. The first two bullets are not necessary. We suggest changing the phrase, “Following are minimum size and type of water bodies which should be edited:” to “The following water bodies should be edited:” and deleting the first two bullets. If the first two bullets are retained, the order of the references to the minimum size and type of water bodies should be switched in the second sentence to reflect the order that the information is presented and we would suggest changing the phrase to, “The following are the types of water bodies and minimum sizes that should be edited:”</p> <p>Second Paragraph, First Bullet. If the first two bullets are retained, we suggest changing the phrase, “Edit by Type to include:” to “Edit the following types of water bodies:”. We would also suggest deleting the reference to “large” estuaries, because this qualifier is not used on the other features listed and the size criteria is described in the second bullet.</p> <p>Second Paragraph, Second Bullet. If the first two bullets are retained, delete the indent command after the bullet character. We would also suggest changing the phrase, “Edit by Size to include:” to “Edit the following sizes of water bodies:”</p> <p>Second Paragraph, Hyphenated Bullets.</p>	Section removed

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1	12.1	<p>Measures should be on the metric standard. Why the vector legacy? What about non-vector standards?</p> <p>Standard should not be scale dependant while we are moving toward both global and meter-resolution DED.</p>	Section removed
1	12.1	<p>Setting shoreline values higher than adjacent water elevations does not allow for water bodies artificially elevated by undetectable or unresolvable features such as levees or an artificial lake supported by a three sided dam. Particularly problematic with increasing post spacings.</p>	<p>Inherent problem with gridded data. Proposed solutions worse than problem. Needs to be dealt with with breaklines, which are not included in this model.</p>
1	12.1	<p>Dates should be associated with pool levels, which fluctuate.</p> <p>Bottom elevations should be included also, as they change little.</p>	<p>Source date information covers this. Feature level metadata not in this model.</p> <p>Bathymetry is outside the scope.</p>
1	12.2	<p>Elevation data are rarely accurate enough for use in slope determination.</p> <p>This is further complicated by the stated policy of distorting land elevations to force land water boundary portrayal.</p>	Non Substantive
1	13	<p>This is a description of a legacy system. Should be visionary to show: digital comparisons of a DED set with rigorous determinations of height inherent with a geodetic control network, GPS readings or control. Should include use of histograms and shaded relief maps as well as discussions that analyze artifacts.</p>	<p>Visionary concepts and exacting specifications are outside the scope of a content standard.</p>

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2	13	First Paragraph, Second Sentence. We suggest changing the phrase, “to aid in the identification of blunders such as irregularly grided data, mistagged tops and depressions and spikes.” to “to aid in the identification of blunders, such as irregularly grided data, mistagged tops, mistagged depressions, and spikes.”	Suggestion applied.
		First Paragraph, Last Sentence. Change the word “methedology” to “methodology”.	Correction applied.
		Second Paragraph, Points 1 and 2. We suggest beginning the first two sentences of both of these point with the word “The”.	Determined unnecessary.
3	13	“Mistagged” may be misleading. Suggest using the term “mis-attributed”.	We feel mistagged is less misleading than mis-attributed.

Key for the Elevation Data Comments Review Table

Column 1 (K)- Reference number for comment source as listed below.

Column 2 (S)- Standards document reference number. Numbers indicate section of document.

“G” represents a “global” or indirectly referenced comment. “A” represents reference to appendix A. “Ref” refers to the reference section.

- 1 = Dave Hastings
Chief Data Fusion and GIS
NOAA National Geophysical Data Center
Email - dah@ngdc.noaa.gov
- 2 = Mid-Continent Mapping Center
attn: John Conroy
- 3 = Rocky Mountain Mapping Center
attn: Buel Grout
- 4 = Kevin Backe
USACE/TEC
kbacke@tec.army.mil
- 5 = M.K. Miles
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